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RUEATRS/DEPT OF TREASURY WASHDC
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RUZEJAA/JAC MOLESWORTH RAF MOLESWORTH UK
RHEHAAA/NSC WASHDC

UNCLAS SECTION 01 OF 03 HARARE 000967

SENSITIVE
SIPDIS

AF/S FOR B. WALCH
EEB/ESC
DRL FOR N. WILETT
CA/OCS/ACS/AF M. RAUGUST
JOHANNESBURG FOR RCO K. MAY
NSC FOR SENIOR AFRICA DIRECTOR M. GAVIN
TREASURY FOR D. PETERS

E.O. 12958: N/A
TAGS: [ENRG](#) [ECON](#) [EINT](#) [CASC](#) [PGOV](#) [ZI](#)
SUBJECT: ZIMBABWE, LITERALLY IN THE DARK

REF: A. HARARE 000361
[1](#)B. HARARE 000941

[1](#)1. (U) SUMMARY: Zimbabwe produces about half the electricity it needs, resulting in persistent blackouts that constrain industrial output and economic recovery. Zimbabwe's Electricity Supply Authority (ZESA) struggles to operate and maintain a decrepit national grid, which due to a chronic lack of coal, aging equipment, vandalism, and general neglect routinely supplies only 750 MW, against a national demand of around 2000 MW. Habitual load-shedding has become the norm, with many rural regions without power at all. Given the absence of scheduled capacity building projects and a government-controlled tariff schedule that prevents revenue for capital improvements, no improvement is in sight. END SUMMARY.

Insufficient Capacity

[1](#)2. (SBU) David Chikowore, an electrical engineer with ZESA (a government-owned parastatal and sole electricity supplier in Zimbabwe) spoke openly about the country's electricity woes during a meeting with Conoff on December 2. Chikowore explained Zimbabwe's root problem is insufficient generation capacity. At the core of the Zimbabwe national grid is the 750 MW hydro-electric plant at Kariba. However, due to periodic maintenance and fluctuating water levels in the Kariba Reservoir, this plant often operates at less than full capacity. For example, in November 2009 the plant underwent annual maintenance that restricted output to only 400 MW, while the reservoir's water level in the dry season often restricts the amount of water that can flow through the turbines. Chikowore estimated that the plant, on average, supplies about 550 MW.

[1](#)3. (SBU) In addition to the hydro plant in Kariba, Zimbabwe has six major and three supplemental coal-burning plants, which all suffer from varying degrees of inefficiency and insufficient coal supply. Hwange, Zimbabwe's principal electricity generating facility is comprised of six major coal-burning furnaces with a total design capacity of 1220 MW. Four of the six are designed to generate 120 MW and two are designed to generate 220 MW. The three supplemental

coal plants, located in Harare, Bulawayo, and Munyati, each have a design capacity of 100 MW. However, due to coal shortage and disrepair, the three supplemental plants have been completely dormant since 2007, while three of the six plants in Hwange are normally down for service or refurbishment at any given time. Chikowore explained that in 2009, Hwange has produced an average of about 460 MW.

¶4. (U) Although Hwange is the site of one of the largest coal deposits in the Southern African region, the Hwange Colliery Company has been unable to meet demand, plagued by a series of conveyor belt, dragline, and equipment failures (Ref A). Like other Zimbabwe state-run enterprises, it suffers from a severe shortage of working capital needed to repair and replace worn equipment. According to MineWeb, a mining news reporting service, the Hwange colliery is operating at less than 50 percent capacity and suffers from chronic breakdowns of its heavy equipment. Unofficial estimates define Zimbabwe's monthly demand at approximately 400,000 tons of coal, with Hwange supplying less than 180,000. Aggravating the problem is the Zimbabwe National Railway's state of disrepair. Chikowore explained that coal for the supplemental plants must be trucked from the colliery, as the railway lines are unserviceable, and that trucking coal to the supplemental plants is neither feasible nor cost effective. He said it was cheaper to buy power from neighboring countries (Mozambique, Zambia, and DRC) than it was to transport coal to the outdated and inefficient supplemental power plants.

Zimbabwe Is 1000 MW Short, But Exports Electricity

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¶5. (SBU) A principal factor in the depressed Hwange output is an ongoing refurbishment of four plants. In a 2007 barter deal between ZESA and Nampower (Namibia's power utility), four of the six turbines are being replaced and the corresponding generators refurbished. In exchange for the refurbished plants, ZESA agreed to repay Nampower by supplying electricity. Similar to a variable mortgage, initial payments in 2008 were for only 50 MW. However, in 2009 the payments jumped to 150 MW and will remain in effect for the next five years. Of note, the Hwange refurbishment only includes the four smaller generators, with the 220 MW generators without any prospect of repair.

Decrepit National Grid and Daily Load-Shedding

¶6. (SBU) Beside not generating enough power, ZESA is also unable to equitably distribute the power it does generate. The whole grid distribution system suffers from years of vandalism and inadequate maintenance, resulting in large areas disconnected from the national grid. Vandalism has included the theft of the transmission fluid from the step-down transformers and theft of the timbers used to string transmission lines. Chikowore estimated that over 900 transformers were in need of service or replacement in Harare and Gweru alone.

¶7. (U) Aware of the gap between supply and demand, ZESA attempts to distribute the pain through publication of a "load-shedding schedule." In theory, the schedule is designed to equitably supply industry and neighborhoods with power, while providing advance warning of blackout periods. However, in practice, the schedule, built upon faulty assumptions, has become merely a starting point for further cuts. November 15, a typical day, serves to illustrate the dynamic.

¶8. (SBU) On November 15, due to annual maintenance, Kariba produced only 450 MW, not the planned 500 MW. Hwange had one more furnace out of service than planned, resulting in only 430 MW production, vice the planned 550 MW. Together, the two plants supplied 880 MW to the national grid, although 1050 MW were planned. From this 880

MW, 150 MW were diverted to Nampower, leaving 730 MW for domestic consumption. The load-shedding schedule assumed a demand of 1170 MW, resulting in a 270 MW shortfall that was used to build the load-shedding schedule (1050 supply, minus 150 Nampower, minus 1170 demand). Assuming an accurate prediction of demand, the ZESA engineers at the control panels faced an additional 170 MW shortfall (because actual production was below the expected level) before anyone turned on a light. However, the 1170 MW demand was inaccurate as well. Throughout the day, as "pulls" on the system increased, nervous engineers watching their frequency panels shed an additional 320 MW in addition to the published schedule of 270 MW. Chikowore explained that this additional real-time load-shedding had become a daily dynamic.

Grim Prognosis

¶9. (SBU) When asked about the future, Chikowore gave a pessimistic prognosis. Lamenting the total lack of any capacity building projects on the books, he said no real change to the daily load-shedding dynamic could occur within the next five years. He said that in the past, ZESA had purchased power from its regional neighbors (Mozambique, DRC, and Zambia), but excess power was in short supply and ZESA could not afford to buy it when it was available.

¶10. (SBU) According to Chikowore, ZESA's average tariff schedule barely covers cost, leaving no revenue for capital improvements or

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refurbishment. In March 2009, amidst a public outcry, the government announced an increase in the average tariff from USD 0.041 to USD 0.075 (7.5 cents) per kilowatt-hour. Chikowore said this increase was still woefully inadequate and did not provide for capital improvements. He said ZESA had applied to the Ministry of Energy Regulatory Committee to increase the tariff to 9 cents beginning in January 2010, though he believes the tariff should be approximately 11 cents to provide realistic funding for refurbishment.

¶11. (U) A November 2009 World Bank report estimated the cost of transmission emergency rehabilitation at USD 561 million. In a November interview preceding publication of the new national budget, the Minister of Energy and Power Development, Elias Mudzuri, said he hoped that his ministry would receive between USD 70-100 million for rehabilitation. As reported in Ref B, Finance Minister Tendai Biti placed the power sector at the top of his public-sector priorities when he presented the 2010 budget, allocating USD 53 million towards refurbishment.

¶12. (SBU) COMMENT: The electricity utility ZESA is another example of a bankrupt GOZ-owned operation. Like Zimbabwe's rail, road, medical, and telecommunications infrastructures, Zimbabwe's electricity power sector will require years and hundreds of millions of dollars to repair. Although Minister Biti acknowledged the importance of refurbishing the power sector, we anticipate a revenue shortfall will compel him to abandon a large portion of this priority in favor of an irreversible commitment for increased wages in the public service. END COMMENT.

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